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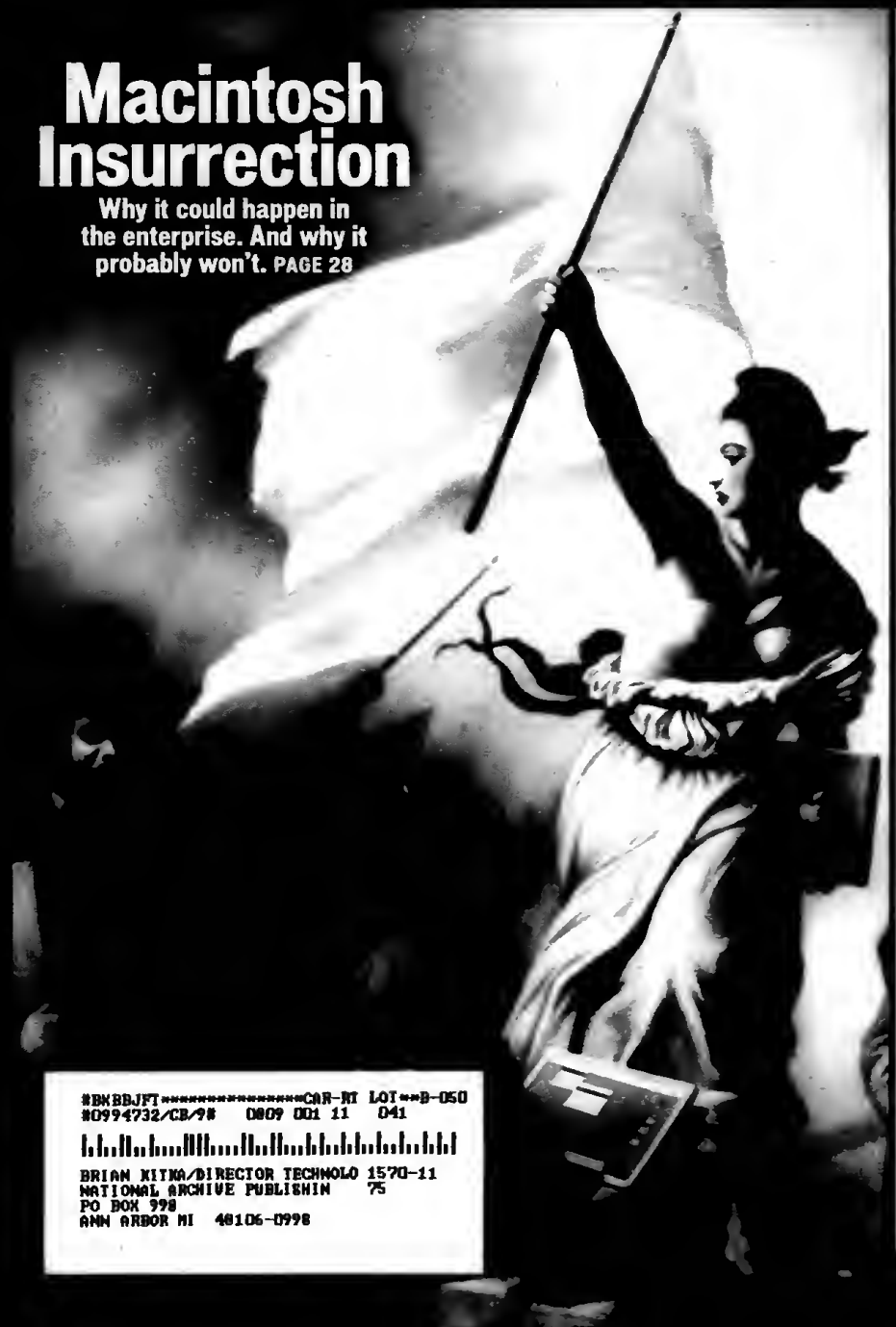

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■ EDITOR'S NOTE

Don Tennant

IT Anachronism

IT JUST doesn't seem all that long ago that we technology journalists were writing about the "information superhighway." It seems impossible that it's been a full 11 years since I was talking about the route of that remarkable thoroughfare with Oracle CEO Larry Ellison.

It was January 1997, and I'd asked Ellison to reveal the dumbest business decision he'd made in the past two years.

"Probably not getting into the Internet soon enough," Ellison replied. "I guess Microsoft, Oracle, a lot of us were distracted by video-on-demand and the information superhighway. That obscured the importance of the Internet."

Back then, *information superhighway* was the gee-whiz term that we journalists applied to the Internet for the sake of catchier headlines and that the dot-com pioneers were using for the sake of a buhhlier bubble. So Ellison's point was a valid one — the inherent business value of the Internet was overshadowed by a wow factor that identified the Internet with information delivery rather than as a new approach to implementing information technology.

In those days, the Internet was an entity unto itself. I was working at the Hong Kong edition of *Computerworld* at the time, and I remember launching *Cyber World* (don't laugh — that was cool stuff in the mid-'90s), a monthly supplement that covered the emergence of the Web, browsers, intranets, e-mail services and the like. By the time I left Hong Kong in early 2000, we had folded it simply because the Internet was so entrenched in IT and in business operations that it no longer made sense to position it as a separate coverage area.

It was a natural evolution, and one that was consistent with the way IT has evolved over time. But evolution is an emotional topic for a lot of people, as reader reaction to a story posted on our Web site last week demonstrates.

That story, which is what reminded me of the interview with Ellison all those years ago, is Julia King's piece "IT Career Paths You Never Dreamed Of."

■ The Internet didn't disappear when it became embedded in the business, and neither will the IT profession.

The premise of the story is that IT job functions are changing, and that some forward-thinking companies are changing job titles and expectations to reflect that reality. For example, King reports that Computer Sciences Corp. is changing the way it places some of its IT workers within client companies, and that according to CSC CIO David McCue, the industry will "see new and made-up titles come about."

"The traditional IT department is beginning to morph into a series of individuals who are comfortable using technology and who know its inherent characteristics," he says. "They are becoming embedded into the businesses as technology mentors."

Similarly, Patti Dodgen, vice president at Mosaica Partners, stresses that technical skills alone don't cut it. "IT is no longer a subset specialty," Dodgen says. "IT is integrated into whatever work you're trying to get done."

King makes it clear that just as the Internet didn't disappear when it became embedded in IT and the business, changing titles and embedding the IT function in the business doesn't infer the disappearance of IT as a career path. Yet that wasn't enough to comfort some readers who were clearly angered hy the article.

"More bean-counter BS," one reader fumed. "Again, wishful thinking on the part of business types [who] believe that all people can he morphed into some version of themselves. Never going to happen."

"Another in a long series of articles about the demise of the IT profession," wrote another, missing the point entirely. The IT profession isn't heading toward its demise. Rather, IT as a profession independent of the business is heading toward anachronism.

In any event, it's understandahle that wrapping your head around what likely lies ahead is difficult, because it's tough for even the most successful among us. During that 1997 interview, I also asked Ellison what he considered to be his smartest decision in the past two years.

"I suppose the introduction of the NC — network computer architecture," he replied.

Enough said. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://hlogs.computerworld.com/tennant.

_INFRASTRUCTURE LOG

_DAY 75: These cables are everywhere!! Connecting underutilized servers to more underutilized servers. Our energy usage is out of control!!

_DAY 77: I found o way out af this mess: the super-efficient IBM BladeCenter.® It helps us manage power ond cooling usage with intelligent Cool Blue™ technology. And with the latest Quad-core Intel® Xeon® processar, we won't have to sacrifice performance for efficiency. So out with cables, in with blades.

_DAY 79: Gil's stuck under the ball. Tried calling his wife. Turns out the photo of his family came with the frame.

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Xeon
inside
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P.O. Box 9171, 1 Speen Street
Framingham, MA 01701
(508) 879-0700
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■ LETTERS

The Real Story on Telecom Deregulation

Broadband access wasn't deregulated in 1996, as Robert Mitchell contends ["Keeping a Lid on Broadband," Opinion, Jan. 28]. We didn't get real deregulation until 2005, and it is just now bearing fruit.

The 1996 Telecom Act relaxed rules on long-haul communications and long-distance voice service but re-regulated most last-mile services and broadband technologies. The result was a dramatic expansion of intercity national and international capacity but a relative slowdown in broadband investment. The result was a "fiber glut," where pathetically thin last-mile tributaries could not generate enough data to fill the newly deregulated, capacious core of the network.

But that was the story five to seven years ago. Today, freed from the old restrictions, U.S. broadband build-outs are now booming.

Decisions by the FCC and the courts in 2003, 2005 and 2006 relaxed or eliminated most last-mile broadband regulation. Some work remains at the state utility commission level. But today, Verizon is investing $23 billion in new fiber-to-the-home links. AT&T is spending billions more on fiber-to-the-neighborhood and greenfield FTTH. These networks will offer broadband services between 10 and 50Mbit/sec. Exactly Mitchell's wish.

Cable companies — whose broadband services were always mostly unregulated and thus gained the broadband lead versus telecom — will have to respond in kind. As Verizon and AT&T leapfrog cable's broadband speeds of around 6Mbit/sec., cable will have to transfer more and more of its generous network capacity from TV programming to broadband service. Already, we are seeing cable systems offer 15 or even 30Mbit service. Within a year or two, millions of Americans will have access to broadband every bit as good as world leaders Korea and Hong Kong.

We are in the midst of the broadband build-out we've all been waiting for. The prescriptions advocated by Mitchell could once again bring broadband to a screeching halt.

■ **Bret Swanson,** *director, Center for Global Innovation, the Progress & Freedom Foundation, Washington*

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IT Career Paths You Never Dreamed Of

Say goodbye to the idea of an IT department. As a 21st century tech professional, your future – and most likely your desk – will be deeply rooted within the business.

Are Enterprises Ready for E-readers?

These devices can provide cheaper, more easily updatable documents to mobile workers. So why haven't they caught on in the enterprise?

Confessions of a Cobol Programmer

Don't laugh. Intrepid young programmers are using dusty old Cobol to boost their careers. Some of them even like it.

How to Prevent Windows Vista's 'Green Ribbon of Death'

Successor to the well-known Windows blue screen of death, it hangs your system when the progress bar freezes an Explorer window. Here's why it happens and how to make it stop.

Wi-Fi Wants to Be Free

The Starbucks deal with AT&T shows that Wi-Fi has reached a tipping point, where it is increasingly being given away to motivate customers to buy other goods and services.

_INFRASTRUCTURE LOG

_DAY 74: This is so complicoted. We're spending oll our time and maney managing our boxes. Gil says he hos o big idea for how to better manage our x86 environment.

_Gil's big idea: sheepdogs...says they work for biscuits.

_DAY 75: I just wrangled up the scalable IBM System x3950. Its IBM X3 Architecture ond IBM Systems Director make it one of the most reliable and economical platforms for x86-based virtualization. Managing our servers and storage is a snap. And with Dual-Core Intel® Xeon® processors, the System x™ servers will run lightning fast.

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News Digest

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THE WEEK AHEAD

MONDAY: Digg is due to hold the first in a series of virtual "town hall" meetings designed to give users a chance to voice concerns about the operation of its news-ranking Web site.

TUESDAY: IBM is scheduled to announce a new mainframe in New York. The debut coincides with a conference being held in Orlando by the mainframe-oriented Share user group.

WEDNESDAY: Microsoft launches Windows Server 2008, SQL Server 2008 and Visual Studio 2008 in Los Angeles.

FOTOLIA

SOFTWARE

Microsoft Pledges to Share APIs, Protocols With Outside Developers

MICROSOFT CORP. last week publicly released more than 30,000 pages of documentation for its Windows communications protocols, the first in a series of steps it plans to take to provide more interoperability capabilities to rival vendors and open-source developers.

In announcing a new set of "interoperability principles," Microsoft promised to publish the details of all the APIs and protocols that its own products use to integrate with Windows Vista, Windows Server 2008, SQL Server 2008, Office 2007 and the current releases of Exchange Server and Office SharePoint Server.

Previously, Microsoft made its APIs and protocols available only under trade-secret licenses. Now, the vendor said, developers no longer need to sign licenses or pay royalties to access and use the documentation.

Ray Ozzie, the company's chief software architect, said during a press briefing that the changes will let outside developers use "the same means as Microsoft does in its own products."

But the new approach wasn't completely voluntary: Microsoft acknowledged that the announcement was part of its effort to comply with the European Commission's 2004 antitrust ruling, after a European court rejected its appeal of the ruling last September.

Nonetheless, Allan Krans, an analyst at *Technology Business Review*, said that the increased openness is "a big shift" for Microsoft.

"This is the new Microsoft," noted Chris Swenson, an analyst at The NPD Group Inc. "They really are changing." But, he added, "no one is going to give them credit for it" because of the vendor's previous business practices.

As if to confirm that, Directions on Microsoft analyst Michael Cherry said that although the new plan looks "pretty good" on the surface, a deeper judgment can't be made until external developers start examining the documentation.

Microsoft also promised that it won't sue open-source developers for distributing its protocols in noncommercial products. And the company said it will craft new APIs to enable file formats other than its own Office Open XML to be used with Office 2007, even as the default choice for saving documents.

— Gregg Keizer

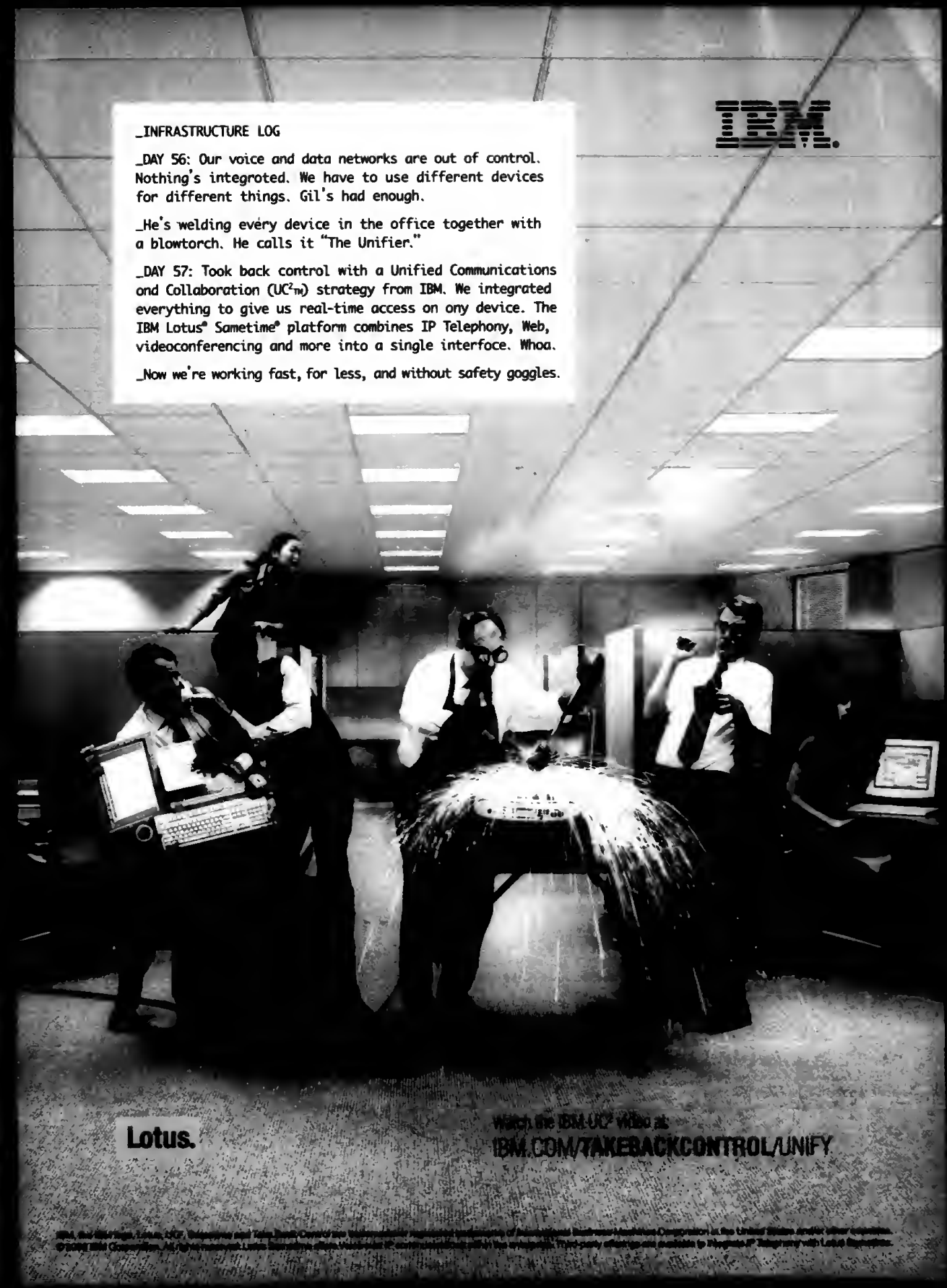
After users flooded its TechNet support forums with reports of endlessly rebooting PCs, Microsoft Corp. last week pulled an update designed to prep Windows Vista for Service Pack 1.

By Friday, Microsoft had posted some work-arounds for the endless-reboot problem on its support Web site. However, the company had not yet issued a revamped update with a built-in fix.

"So far, we've been able to determine that this problem only affects a small number of customers in unique circumstances," said Nick White, a Windows Vista program manager, in a blog post. He added that a fix was in the works.

A Microsoft spokeswoman said the snafu won't affect plans to offer SP1 to most users next month, or to start automatically installing it on PCs by mid-April.

GREGG KEIZER


IBM.
_INFRASTRUCTURE LOG
_DAY 56: Our voice and data networks are out of control. Nothing's integroted. We have to use different devices for different things. Gil's had enough.
_He's welding every device in the office together with a blowtorch. He calls it "The Unifier."
_DAY 57: Took back control with a Unified Communications and Collaboration (UC²™) strategy from IBM. We integrated everything to give us real-time access on ony device. The IBM Lotus® Sametime® platform combines IP Telephony, Web, videoconferencing and more into a single interfoce. Whoa.
_Now we're working fast, for less, and without safety goggles.
Lotus.
Watch the IBM UC² video at:
IBM.COM/TAKEBACKCONTROL/UNIFY

LEGAL ISSUES

Federal Court Shutters Whistle-blower Web Site

A FEDERAL [illegible] week shut down a controversial Web site in the U.S. that allows whistle-blowers to post corporate and government documents anonymously. The Wikileaks.org site remains online in Belgium and Germany.

The order was in response to a complaint filed earlier this month by a Swiss banking firm, Julius Baer Group, against the site and its domain name registry, Dynadot LLC.

Federal Judge Jeffrey White issued two permanent injunctions, one ordering Dynadot to immediately disable the Wikileaks.org domain name and a second requiring Dynadot to immediately clear and remove all DNS hosting records for the domain name.

In a posting on its site, Wikileaks called the order "clearly unconstitutional" and said that it exceeded the jurisdiction of the court. The statement also contended that Wikileaks had little notice of the San Francisco court hearing and had no representation.

"The serious defamatory allegations are based on forged and stolen documents and are unequivocally denied.
MARTIN SOMOGYI
SPOKESMAN
JULIUS BAER GROUP

According to Wikileaks, the documents posted on the site showed that the Zurich-based bank was involved in offshore money-laundering and tax evasion activities for customers.

In its complaint, Julius Baer Group claimed that the documents were illegally obtained, are confidential and contain copyrighted information. Martin Somogyi, a spokesman for the bank, added that the "allegations are based on forged and stolen documents and are unequivocally denied."

Privacy and civil rights advocates were critical of the court's decision to permanently shut down an entire Web site because of a complaint about a small part of it. "It's contrary to any interpretation of First Amendment law," said David Ardia, director of the Citizen Media Law Project at Harvard Law School.

A fairer outcome would have been for the court to order Wikileaks to remove only the offending documents, and perhaps assess monetary damages if the site had been in violation of copyright, privacy or other laws, Ardia said.

Marc Rotenberg, executive director of the Electronic Privacy Information Center in Washington, said that from a technology perspective, "there is no meaningful way the courts can restrict the dissemination of this information on the Web."

— Elizabeth Montalbano, IDG News Service, and Jaikumar Vijayan

Short Takes

Chrysler LLC has awarded an outsourcing contract to Tata Consultancy Services Ltd., consolidating IT services now handled by separate providers. Tata will be responsible for maintaining dealers' online vehicle ordering systems and Chrysler's dealer and brand Web sites.

EMC Corp. has acquired Pi Corp., a maker of personal information management tools. Pi is headed by Paul Maritz, a former top Microsoft executive. Terms of the deal were not disclosed.

Sybase Inc. has launched a cluster version of its Adaptive Server database, taking on the likes of Oracle's Real Application Clusters. The Enterprise Cluster Edition uses shared-disk clustering, which allows application workloads to be balanced among instances.

EMC has hired former BearingPoint Inc. CEO Harry You to serve as executive vice president, office of the chairman. He reports to Joe Tucci, EMC's chairman, president and CEO.

DEVELOPMENT

Microsoft to Give Away .Net Tools to Students

FOR JAKE BASILE, a computer science major at the University of Akron in Ohio, being an outspoken fan of Microsoft Corp.'s development tools sometimes feels as lonely as being a young Republican – which he also is.

Basile, a sophomore, has only one class this semester that uses Microsoft's .Net framework and Visual Studio tools. The rest are Java classes, he said.

Microsoft's standing on college campuses has been eroded by a combination of open-source tools and Adobe Systems Inc.'s Web design software. Now the company is trying to fight back by making some of its key products available free of charge to students in the U.S., Canada, China and eight European countries.

Via a new program called DreamSpark, students will be able to download the Professional editions of Visual Studio 2008 and its Visual Studio 2005 predecessor, as well as three other products.

Both vendor and students may benefit, said Chris Swenson, an analyst at The NPD Group Inc. "It looks good for a student to be able to put on his résumé that he's using the full version of Visual Studio," Swenson said. "And how much money was Microsoft really getting from students?"

– ERIC LAI

What's Up for Grabs By Students

- Professional editions of Visual Studio 2005 and 2008
- XNA Game Studio 2.0 (for game design)
- Expression Studio (Web design suite)
- Windows Server 2003 Standard Edition
- SQL Server 2005 Developer Edition

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– [illegible]

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SECURITY

White House Flap Sheds Light on E-mail Backup

STORAGE EXPERTS and users say recent legal issues surrounding missing White House e-mails should help convince IT managers of the need to improve e-mail backup and archiving policies.

Justin Jongbloedt, senior Microsoft infrastructure engineer at St. Paul, Minn.-based retailer Gander Mountain Co., said such high-profile e-mail archiving and backup gaffes can serve as a good measuring stick for organizations.

"Learning from lessons is pretty much what it comes down to," said Jongbloedt. "It allows our lawyers to look at that and see what [problems other] people are running into instead of making your own mistakes."

A watchdog group last year sued the White House in an effort to gain access to e-mail that officials said was lost. A federal judge this month ruled that the group, Citizens for Responsibility and Ethics in Washington, can question White House officials in an effort to find the missing e-mail.

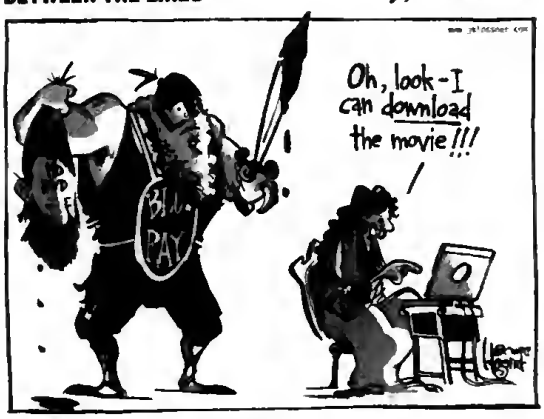
Mike Osterman, president of Black Diamond, Wash.-based Osterman Research Inc., said many businesses do not have adequate e-mail archiving and policy-based data-retention processes because they mistakenly believe that e-mail is not a business record.

The White House lawsuit "should wake people up to what could happen if you don't save e-mail appropriately. It's a good shot across the bow and a very good lesson for senior managers," he added.

Osterman suggested that IT managers should outline the retention responsibilities of each corporate unit by defining business information and listing how long it should be stored.

— Brian Fonseca

BETWEEN THE LINES *By John Klossner*



and both shut down their analog cellular networks, marking the sunset of that technology, which has been superseded by digital networks.

Several weeks after giving Netscape Navigator a one-month support reprieve, released a final update and urged users to switch to Firefox or 's namesake browser.

The U.S. Food and Drug Administration called for the widespread use of RFID technology to track the distribution of prescription drugs.

Global Dispatches

U.K. Probes Thefts Of Military Laptops

LONDON – The U.K. Ministry of Defence last week launched an inquiry into the loss of two laptop computers containing unencrypted personal details.

The ministry discovered the loss of the two laptops during an investigation into the theft earlier this year of a laptop from an officer in the Royal Navy. That laptop contained information on 600,000 people.

The current probe is looking into the 2006 theft of a Royal Navy laptop that contained personal data on 500 people, as well as the disappearance of a computer from an army recruiting office in Edinburgh in 2005, said Des Brown, the U.K.'s defense secretary.

"Our internal investigation has identified weaknesses in the application of [Ministry of Defence] security procedures," Brown said.

Computerworld U.K. staff

Security Concerns Hold Up 3Com Deal

SHENZHEN, CHINA – The proposed $2.2 billion sale of 3Com Inc. to Bain Capital Partners LLC and Huawei Technologies Co. is on hold because the U.S. government's Committee on Foreign Investment in the United States has raised national security concerns.

The concerns prompted the three companies to withdraw a filing with CFIUS, whose members include representatives of 12 U.S. agencies. The committee said it is worried about the close ties of Shenzhen-based Huawei to the Chinese government.

Under the deal, Bain would gain an 83.5% stake in 3Com, and networking vendor Huawei would own the rest. The three companies said they are committed to addressing the issue.

Grant Gross,
IDG News Service

BRIEFLY NOTED

London's Heathrow Airport blamed a faulty software upgrade for a baggage-system failure that affected thousands of passengers last week. The glitch crashed two baggage-sorting machines on Feb. 19, said an airport official.

Siobhan Chapman,
Computerworld U.K.

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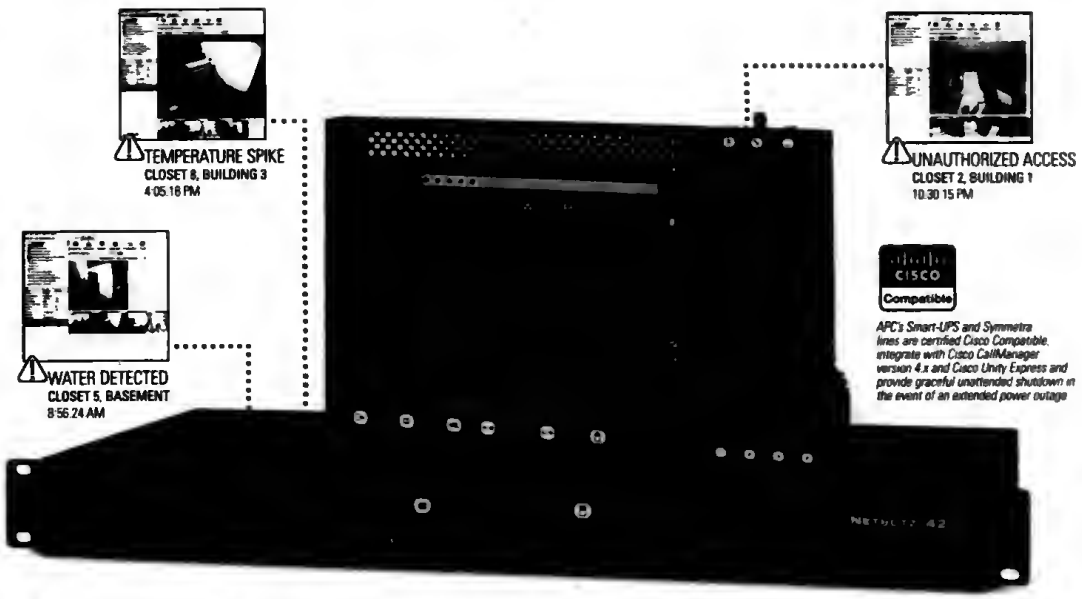

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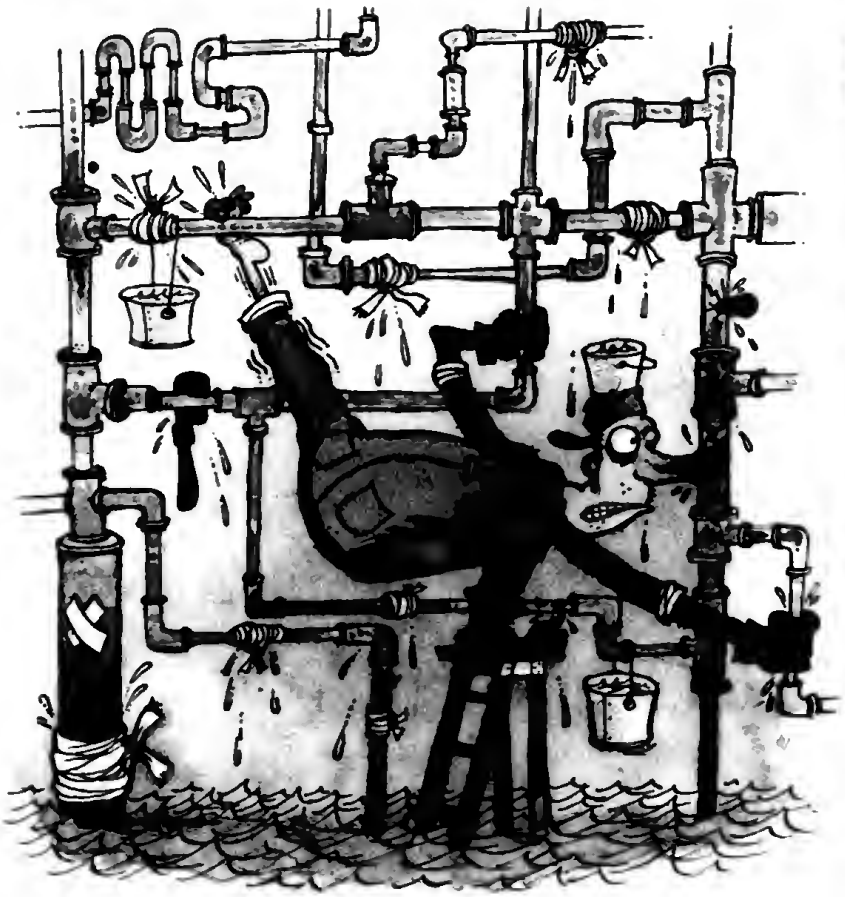

DAVE CLARK

Constant Patch Releases Forcing New IT Processes

Managers struggle to find ways to deal with the flood of fixes. By Jaikumar Vijayan

THE FIRST Sunday after the second Tuesday of every month is a big day for the Arlington County, Va., IT unit's network operations team.

That's when the group gets to test and deploy the patches that Microsoft Corp. releases each month as part of its regularly scheduled security update process.

Some months, the team gets lucky and the vendor issues only a few security fixes.

On other occasions, such as this month, the county government's IT staffers aren't so fortunate. On Feb. 12, Microsoft released fixes for 17 vulnerabilities — the company's biggest monthly patch release since February 2007.

Analysts and users said that such large releases can be overwhelming to some organizations, prompting IT staffers to look for ways to ease the patching process. Some shops, like Arlington County's, have created especially strong procedures for dealing with the problem.

Lou Michael, director of network and infrastructure services in Arlington County's department of technology services, said his organization began setting up formal processes for fixing software vulnerabilities after Microsoft moved to a monthly patch release schedule in October 2003.

Previously, Michael said, patch implementation was mostly handled on an ad hoc basis, and IT personnel were directed "not to touch the patches until there was some problem."

Microsoft's move to issuing patches monthly "has allowed us to plan for ourselves and to set expectations for our customers," Michael said. "We've added structure and some formality to our patching process. There's been a shift from being reactive [to threats] to having a plan" for addressing them.

The county now has a fairly mature process that enables it to assess, prioritize and automatically implement security fixes, Michael added.

"Folks are giving the entire patch life cycle more attention and higher priority," noted Pete Lindstrom, an analyst at Burton Group, an IT consulting firm in Midvale, Utah.

BIG WORKLOAD

This month's "Patch Tuesday" release from Microsoft included fixes for widely used programs like the Windows operating system, Office applications, Internet Explorer and the Internet Information Services Web server. The list included five updates that were rated "critical" — the highest rating in Microsoft's four-level threat-scoring system — and 12 that were labeled "important," the second-highest rating.

"Overall, we [were] astounded with the quantity and size of the latest patches," said Matt Kesner,

Continued on page 16

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Continued from page 14
chief technology officer at Fenwick & West LLP, a law firm based in Mountain View, Calif. "This month's [patches] will cost us over 100 hours of IT time to test and apply. That seems excessive for a midsize enterprise like ours."

Jonathan Fan, senior director of product management at BigFix Inc., an Emeryville, Calif.-based vendor of vulnerability management products, noted that even companies that don't rely on Microsoft software are increasingly facing similar issues with products that run on non-Windows operating systems.

Several other major software vendors, including Apple, Oracle, Adobe Systems and Skype, issued fixes for corporate and consumer software just before Microsoft released its February patches, said Fan.

SETTING PRIORITIES

The increasing volume of patches has led some companies to create systems for prioritizing vulnerabilities to make sure the most critical ones are fixed first, said Matt Mosher, senior vice president of the Americas at Lumension Security Inc., a vulnerability assessment and patch management vendor in Scottsdale, Ariz.

Gone are the days when IT security personnel rushed to patch everything just for the sake of patching, he said. Companies must become more methodical and make sure that the most serious vulnerabilities are fixed first.

"They are definitely trying to prioritize on the ones they feel pose the greatest risk," Mosher said. "They are trying to apply some risk assessment and risk scoring" to patching decisions.

> **"Overall, we [were] astounded with the quantity and size of the latest patches. This month's [patches] will cost us over 100 hours of IT time to test and apply. That seems excessive for a midsize enterprise like ours.**
> **MATT KESNER,** CTO, FENWICK & WEST LLP

Fenwick & West, for instance, prioritizes Microsoft patches, fixing critical vulnerabilities immediately and taking up to 30 days to fix the less important ones.

Regulatory and internal requirements have also helped push IT shops to adopt formal patch management practices, Mosher noted. Companies are increasingly required not only to securely patch their systems, but also to demonstrate auditable compliance with government and industry rules, he added.

"The issues have changed," Mosher said. "Companies have to apply more patches and prove that they are patching. It's a question of, 'How do I report on compliance?' "

Companies also need to ensure that vulnerabilities remain patched so that previously patched bugs don't reappear, Mosher added.

Fan noted that some companies have implemented multiple defenses, such as firewalls and intrusion-detection and -prevention systems, to try to reduce their dependence on patching. While such measures may have helped, they haven't eliminated the need for patching, he said.

Fenwick & West has "multiple layers of security," Kesner said. "We hope that gives us time to bring our systems up to date, but one never knows if that is true — except in hindsight.

"The six layers of antivirus, antispam and antimalware we run don't reduce the need to patch," Kesner added. "They just give us hope that we have breathing room."

According to Michael, Arlington County's approach is to guard against vulnerabilities as well as patch them. It's akin to wearing a "belt *and* suspenders," Michael said.

AUTOMATION HELPS

The emergence and relative maturity of automated patch management tools from vendors like BigFix and Lumension have also been catalysts for corporate change.

BigFix's policy content modules for patching and Lumension's PatchLink Update tool automatically scan networks for disclosed vulnerabilities and check to see whether patches for them have been applied.

> **"[Microsoft's patch schedule] has allowed us to plan for ourselves and to set expectations for our customers. We've added structure and some formality to our patching process. There's been a shift from being reactive [to threats] to having a plan.**
> **LOU MICHAEL,** DIRECTOR OF NETWORK AND INFRASTRUCTURE SERVICES, ARLINGTON COUNTY, VA.

When new patches become available, the agent-based technologies from both companies inspect each endpoint to see if the installed patches are working. If necessary, the tools can automatically fix unpatched vulnerabilities, according to officials at both vendors.

The tools can also monitor a system to see if changes are made that could once again leave it vulnerable. In addition, such products enable companies to roll back patches in case they disrupt other applications or cause them to crash.

Fan noted that some companies are also looking to integrate patch management practices with broader configuration management and vulnerability assessment and remediation processes.

"People are interested in seeing a single view" of vulnerabilities, he said. "They are trying to understand their security posture and have more visibility and controls over all of the software" in heterogeneous environments.

"It's about security configuration management," Fan said. "What are the security standards for my desktops and servers? What are the configurations, and how do I make sure I don't drift? How do I know in real time if a patch that came out for a vulnerability is something I need?"

One of the challenges with something like Microsoft's Patch Tuesday, Fan said, is that "as an IT organization, you have 11 different issues that you need do deal with, so how do you buy time? We are seeing a movement toward understanding" such issues. ■

BY BOB HEARD

protecting what matters: your data

Security awareness is not threat preparedness. Only an integrated, data-centric architecture can provide a single view into all endpoints and users—and optimal security.

OVER THE LAST THREE YEARS VARIOUS DATA breaches have potentially exposed the personal information of more than 210 million U.S. residents.* Businesses and government agencies are increasingly aware of the ramifications to their brands, as well as the direct costs of rectifying a breach. But are they more prepared now than in the past to prevent a breach before it occurs?

While there are numerous causes of data breaches, one of the more common is for data to be lost, stolen or exposed on an employee's laptop, smartphone, iPod or USB thumb drive.

One organization I visited recently thought it was protected against data breaches because some 20,000 employees were notified by email not to use thumb drives or personal devices like smartphones, or to take data out of the office. When I asked how that policy was working, the CISO replied, "It's a joke around here." A second organization, taking a more draconian approach, said its policy was to apply superglue to the USB ports on every new laptop that was provisioned.

Clearly, businesses and government agencies need to be much better prepared to prevent data breaches, while at the same time enabling business processes that result in increased workforce productivity.

First, they have to guard against external threats such as lost or stolen laptops ending up in the wrong hands. But what about the internal threats? If, for example, an executive has a problem with his or her laptop, it's likely dropped off at the IT department where an on-premises or off-premises employee or independent contractor may have access to all the data on the hard drive. What about the threat of the committed employee extending the workday by taking data home, but unwittingly causing the data on the home computer to be compromised?

Historically, organizations have relied on hard drive encryption to protect sensitive information. But today, data is pervasive and often ends up on personal or home computing devices. Security executives should require a data-centric, policy-based approach that unifies endpoint data security holistically across all devices, users and data.

We recommend the following five best practices to our clients to help them attain their endpoint data security goals and implement technology at the lowest possible total cost of ownership (TCO):

1. **ENFORCE** by policy complete data protection without any risk of users placing data in areas that would not be encrypted, with no one other than the authorized user having the ability to view such data.
2. **ENSURE** transparency for end users and desktop and network operations teams.
3. **MAKE SURE** any data taken outside the organization is encrypted and protected, especially on USB thumb drives.
4. **PUT IN PLACE** audit processes to ensure that any device can be "proven" to be encrypted at any time to prevent the need for breach notification if the device is lost or stolen.
5. **AVOID** any impact to forensic processes due to encrypting data.

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True security encompasses both the pervasiveness and the portability of data. It requires processes and policies that accommodate the needs of both end users and IT staffers without driving up costs or adversely impacting security processes and usability.

* Source: Privacy Rights Clearinghouse

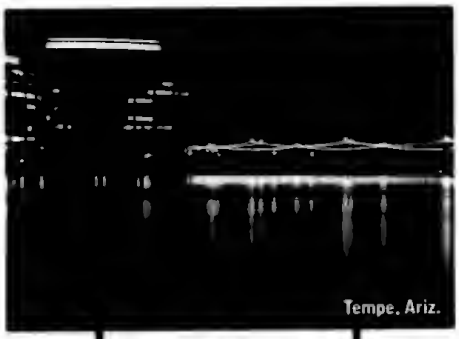
Bob Heard, Founder and CEO, CREDANT Technologies

Read more about CMG Full Data Encryption2, an exciting alternative to full disk encryption, at www.credant.com.

Doubts Cast on Municipal Wi-Fi as Projects Hit Potholes

Vendors have had trouble making wireless networks pay off in several cities, raising questions about the viability of the highly touted market. By Matt Hamblen

THREE years ago, Tempe, Ariz., was one of the first major U.S. cities to announce municipal Wi-Fi plans. Its citywide network went live in 2006, making wireless services available to all of Tempe's 170,000 residents.


Tempe, Ariz.

Dave Heck, the city's CIO, remembers how municipal Wi-Fi advocates talked about wireless networks as shining beacons that would bring Internet connectivity to the masses. But that kind of optimism is nearly gone in Tempe, and the city's network is dead in the water.

On Dec. 28, Kite Networks Inc., a division of Gobility Inc. that had been operating the network in Tempe, cut off connections and pulled the plug on its customer service phone line and Web site. Heck said subscribers have been hounding city officials to restore the Wi-Fi service. But the city's leverage over Gobility is limited, he added.

"Obviously, the city never thought this would happen, or we would have never gotten into it," Heck said. "People are pointing fingers, with some citizens thinking [the city] had more involvement than we did. Nobody could have foreseen this."

> **"Obviously, the city never thought this would happen, or we would have never gotten into [Wi-Fi]. . . . Nobody could have foreseen this.**
> **DAVE HECK,** CIO, TEMPE

But Tempe isn't alone in feeling the sting of unfulfilled municipal Wi-Fi expectations. For example, Chicago's government dropped a planned Wi-Fi project last August, citing high costs and low subscriber interest. That same month, EarthLink Inc. pulled out of a deal to work with Google Inc. to build a Wi-Fi network in San Francisco.

And then in November, EarthLink said it was considering "strategic alternatives" for its municipal Wi-Fi unit, after concluding that it couldn't recoup investments in networks via advertising revenue or residential subscriptions. Earlier this month, EarthLink announced that it is now trying to find buyers for its Wi-Fi assets and is checking to see "if the cities themselves are interested" in taking over ownership.

Terry Phillis, CIO for Philadelphia's government, said he is making contingency plans in case EarthLink sells or abandons a citywide Wi-Fi network that the company began building last May. A sale of the network to another vendor would be preferable to having the city take control, Phillis said. But he wants to be prepared for either possibility.

EarthLink assured the city last fall that it would finish the network, Phillis said. "We consider [the network] an asset for the city," he noted. "Our priority is to get it completed."

Tempe's Wi-Fi network had a peak subscriber base of fewer than 800 people, Heck said. He blamed poor marketing by Kite Networks, which Gobility acquired last July.

Gobility CEO Gary Brown declined to comment, citing legal reasons.

Heck said that if the Wi-Fi service isn't restored by March 28, the city may seize the network's assets, which primarily consist of 900 wireless access points installed on utility poles. Tempe doesn't want to run the network itself, but Heck said the seizure could force Gobility into action. Another option, he added, would be to charge the company rent for the space on the poles, which would amount to almost $2 million per year.

In lieu of rental fees, the city was supposed to get free Wi-Fi service for use by police officers, traffic engineers and water inspectors. Some of those capabilities were being rolled out last year, but their fate is now uncertain, Heck said.

Esme Vos, founder of the MuniWireless Web site, insisted that the municipal Wi-Fi market isn't dying. For all but the largest cities, though, a business model in which the cities themselves don't help to fund the networks through so-called anchor tenant deals isn't viable at this point, Vos said.

Jeffrey Kagan, an independent analyst in Atlanta, agreed with Vos that municipal Wi-Fi "will win" in the end. But, he added, "taxpayers have lost so far." ■

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On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Get Users Saluting Together

KERIO MAILSERVER 6.5 could be pretty good news for IT shops whose users want to collaborate despite being on different systems. According to Dusan Vitek, vice president of worldwide marketing at Kerio Technologies Inc. in San Jose, the new release lets Linux, Mac, Windows and even mobile handset users all share and subscribe to one another's calendars. He says MailServer 6.5 also includes an updated Outlook plug-in that lets people read and write mail, make calendar changes and perform other groupware tasks while disconnected from the Kerio MailServer. The new plug-in includes the open-source Firebird database, which can capture all work done on the road and update everything once the user reconnects. Another benefit of Firebird, Vitek says, is that users can do full-text searches. Pricing starts at $499 for 10 users.

Vitek: Use different operating systems; share one groupware tool.

Rely on Hardware

More than 150 million PCs and laptops are equipped with the Trusted Platform Module (TPM) microprocessor, estimates Steven Sprague, CEO of Wave Systems Corp. in Lee, Mass. And Intel Corp. will soon include TPM as part of its chip sets. So, Sprague states, "there's no excuse anymore" for organizations to overlook this technology for storing data encryption keys and providing authentication services. Corporate IT departments need to be educated about the benefits of using the TPM chip to secure computers, he says. First, Sprague points out, "you can't hack hardware." If a hacker doesn't type the user's PIN or passcode, he can't access the machine. IT's reliance on software to secure data and network access baffles Sprague. "Software for security has pretty much failed us," he says. For IT, the near-term security advantages of TPM are significant. Without making any new investments, Sprague claims, IT departments can "write 10 lines of code" to enable networks to accept authentication certificates from TPM machines — no more maintaining occasionally flaky VPN clients and infrastructure.

CIOs need to leverage existing hardware security on PCs, argues Sprague.

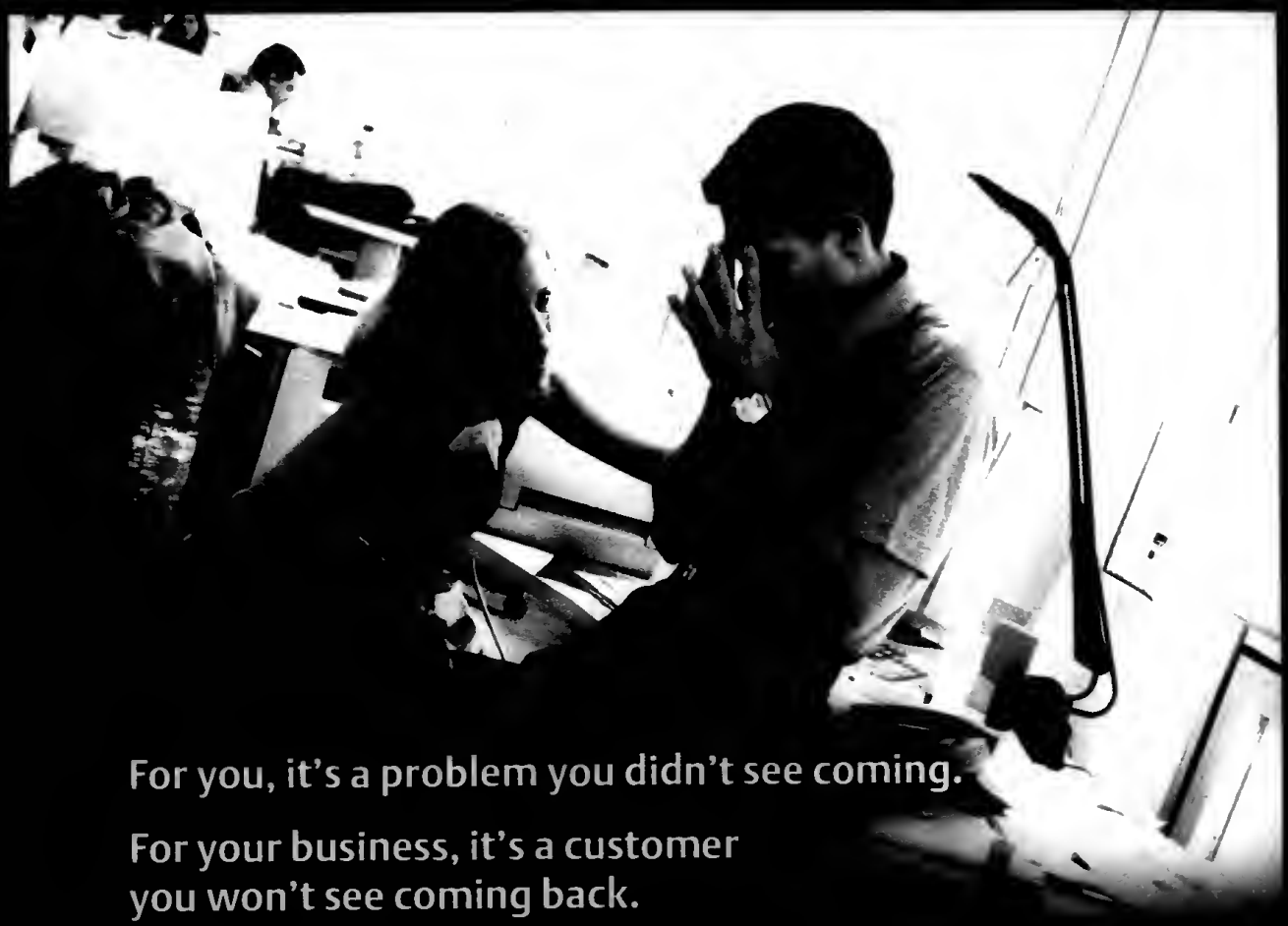
No Recession in Store for MSPs?

We should all be so lucky. In good economic times, managed service providers (MSP) get business when their customers are expanding too fast for in-house IT staffers to keep up. In bad times, customers often need to cut capital expenditures and head count, bringing more business to MSPs. Moreover, MSPs cover all business segments, and not all vertical markets dip simultaneously. As Christopher Assif says, "When the financial segment goes down, the health care sector goes up. We're sort of recession-proof." Indeed, despite talk of recession, the executive vice president of Louisville, Ky.-based Smoothstone IP Communications Corp. forecasts that his company will add 50 people this year. And he says he's "not terribly nervous" about MSPs from India, which he claims will compete mostly on price, not quality of service and support.

$30B
IDC's estimate of the total MSP market in 2007.

To lure even more business, Smoothstone, which manages converged voice and data IP services, will add instant messaging support to its service menu. The Smoothstone Messaging Service, available in Q2, will use best-of-breed technology from a third party (possibly IBM) that is integrated into the company's Web-based management console, where users can see the status of their network, voice and, soon, messaging connections through a single user interface. Pricing for the IM service has not been set. ■

MORE BUZZ
Discover and discuss more industry action at the On the Mark blog: computerworld.com/blogs/hall



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Dossier

Name: Dawn Lepore

Title: CEO

Organization: Drugstore.com Inc.

Location: Bellevue, Wash.

Last book read: "*Harry Potter*. My husband and I take turns reading aloud [to their 5- and 9-year-olds]. It's the best time of the day."

Favorite technology: TiVo

Technology she couldn't live without: "You mean besides TiVo? E-mail."

Three things we'd find in your Drugstore.com shopping cart: "Prilosec [heartburn medicine], unfortunately; iCoaster, which is my son's favorite toy; and South Beach Diet oatmeal chocolate chip cookies, which are my absolute favorite."

■ **THE GRILL**

Dawn Lepore

The **CIO-turned-CEO** talks about **how to make it to the top,** why **women are perfect for certain key IT roles,** and the IT-intensive **road to profitability at Drugstore.com.**

Your technology career began at Charles Schwab & Co. in 1983. By 1994, you were a CIO, and now you're a CEO. Is this the executive trajectory you imagined for yourself? Yes and no. I was a music major at Smith [College]. I thought I could never aspire to be a CIO. Then, when I got to be a CIO, it was a really challenging and exciting time at Schwab, and I thought it would be fun to be a CEO. But at that point I wasn't sure how to get there.

The thing that helped me was the opportunity to take on broader roles. I think it is very difficult to go directly from being a CIO to a CEO. During my first year at Drugstore, this company had a lot of issues. It was definitely a stretch job for me, but there was absolutely nothing I encountered that I had never seen before, because I had run operations, legal and human resources [at Schwab]. I had seen benefits plans before. I had been responsible for P&L, so I knew how to think about it. Legal had reported to me, so when we had a lot of issues with contracts, I had a good understanding of the issues and an understanding of how to negotiate situations. I had been involved in mergers and acquisitions, so I knew about good M&A integration. Everything I had done was really, really valuable, and I drew on almost every one of my experiences in the first 12 to 18 months here.

My best advice to a CIO who wants to be a CEO is broaden yourself, broaden yourself, broaden yourself, whether it's through serving on boards or through nonprofit work or lateral moves in your company or changing industries. If you do that, you'll be very happy when you ultimately find yourself in the position of running a company.

How does your experience as a highly successful CIO inform your relationship with Drugstore.com's CIO, Luke Friang?

Continued on page 24

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The Right Technology Right Away

"Technology is a very, very interesting career. You get to reinvent yourself all the time.

Continued from page 22

I have very high expectations. Good enough is not enough to build a great company with world-class technology operations. When there's a prohlem, I can drill down pretty deeply. He's got to be ahle to explain to me all the details of what has happened, and he is very good at that.

It's interesting at Drugstore because we're a retail company that leverages technology. The Internet is our distribution channel. Technology is certainly important. Schwab leveraged technology as well, but technology wasn't Schwab's business, in the sense that there are also hranches. Because our store is our Weh site, most of the executives know a fair amount ahout technology and are involved, and that makes the CIO's role easier and harder.

How so? The part where it's easier is that Luke doesn't have to make a case that technology is important or convince us that we need to use technology to move the husiness ahead. He has creative good partners at the tahle with him. The downside is that it's always harder when you have people who think they know a lot about what you do. Sometimes people know just enough to he dangerous. They think they know all the issues surrounding the new technology or the technology organization, and they don't.

Frankly, I think the fact that Luke reports to me is both easier and harder for him. I truly know what it's like to walk in his shoes. I know the pressure he's under. But it's also harder in that I have very high expectations of him and I ask a lot of questions.

Drugstore.com is growing, but it has struggled to get to profitability. How are you tapping IT to turn this around? First, we were profitahle last year on an EBITDA [earnings before interest, taxes, depreciation and amortization] basis. We made $2.4 million, and I told the Street that [in 2007] we'll make $9 million or $10 million.

This is all about driving margins and driving sales, cutting costs and providing great service. This year what has really made a difference is we've added alternative payment options. That was a hig technology project. We've added drop-ship, which gives us the capahility to carry 7,000 more SKUs that we don't have to store in a warehouse. We drop-ship them from the manufacturer. We put in a new internal search tool, which is helping customers find things. When we added 7,000 SKUs, we had to make sure customers would find what they were looking for. Our results are because of these hig IT projects that we've gotten done. It's a credit to both the business people and the IT people who delivered them. It's definitely a team effort.

I want to talk about women in IT. Just 21% of computer science degrees go to women today, compared with 37% in 1985. What impact does the exodus of women from computer science have on IT and on business generally? Anything that limits the talent pool or diversity of the talent a company can have is had. I don't quite understand all the reasons for women leaving IT. I don't think they find a lot of role models and mentors. I think there are a lot of pure technology companies where the culture has grown up to be less supportive to women.

It is discouraging to me hecause I think technology has great potential for women. A lot of technology positions are about synthesis, collaboration and innovation. They're about relationships as you're helping your husiness partners solve prohlems. There are many women who have very strong skills in these areas, and it's a shame not to leverage them.

Technology is a very, very interesting career. You get to reinvent yourself all the time.

What's next for you? Well, I have a lot of work to do still here. But in some ways, now the fun can begin. We've spent the last three years making sure we're profitable, looking at cost structure, changing husinesses we're in and offers in the marketplace. Now we can take a profitahle, growing hase and huild on it. We're looking at hroadening our offering to adjacent categories and doing more partnerships. Taking a company from $450 million to $1 hillion is more fun than taking a $350 million company and growing to get it profitahle, so I still have a lot of work to do here.

— *Interview by* **Julia King**

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■ OPINION

Thornton A. May

The Many Worlds Of Technology

OUR WORLD has changed. On second thought, make that "worlds." The things technology executives are supposed to handle have expanded exponentially. Virtualization, innovation, globalization and collaboration now require mastery of multiple worlds.

Here's a rundown on some of the worlds you may now find yourself in.

■ The Cold War brought us the First, Second and Third Worlds. There is now a fourth — the virtual world. Not so long ago, IT leaders really only had to understand the First World. This was where technology came from and where it was deployed. This is no longer the case. IT leaders need to understand all four worlds so that they can source talent and deliver IT services in them.

As for those physical worlds, geography still matters — at least as far as IT spending patterns are concerned. IT spending in the Asia-Pacific region, Eastern Europe, the Middle East and Africa is forecast to run three to four times higher than in the U.S., Canada, Latin America and Europe over the next 18 months.

■ Innovation has fundamentally transformed and expanded IT's world of devices. There are a lot more things that we have to examine, cost-justify, deploy, manage, maintain and, eventually, retire. Someday soon, vendors assure us, their impressively imagined product road maps will lead us to a world where a single management framework can manage all of our IT infrastructure. We're waiting.

■ Perhaps the most challenging world facing today's IT leader is the world of work. An IT professional of 20 years ago would find today's IT work and IT workers virtually unrecognizable. Where they work is constantly changing.

■ Perhaps the most challenging world facing IT leaders is the world of work.

Look at how much has happened with the home office. Dieringer Research Group estimates that more than 28 million Americans work from home at least part of the time. According to the American Home Furnishings Alliance, seven in 10 Americans now have designated workstations in their homes. The National Association of Home Builders says home offices rank as the fourth most important feature for buyers of upscale houses.

The relationship between the people doing the work and the entities for whom they do it has changed as well. Daniel H. Pink, author of *Free Agent Nation* (Business Plus, 2002), estimates that one-fifth of the people in the U.S. workforce are self-employed. The typical IT workforce has full-time, part-time, contract and outsourced resources.

But these free agents still must be managed and led. You will have to bring a variety of formal and informal performance feedback tools to bear in the modern IT workplace. Determining salary and benefit levels and managing advancement opportunities are much more complicated for a hybrid labor pool.

You will have to be a "multivational" leader — one who uses multiple motivational techniques. Multivational leaders realize that each situation requires a calibrated persuasion technique. The multivational leader must master and manipulate different and overlapping incentive systems, drawing on promotional, intellectual, social and financial motivators.

Unlike in Earth's solar system, the number of worlds in the IT solar system keeps expanding, not contracting (goodbye, planet Pluto). How many of your worlds have you mastered? ■

Thornton A. May *is a longtime industry observer, management consultant and commentator. You can contact him at thorntonamay@aol.com.*

Advertisement

How to Protect and Improve System Performance

The Top Ten Points to Know about Fragmentation

IT professionals are heroes of the workplace. Whether with cunning wit or a Phillip's head screwdriver, they solve most any computer emergency. However, keeping a computer running at top speed is usually preventative maintenance instead of last-minute, adrenaline-surging, virus-vaccinating heroics.

Here are 10 key points to maintain peak performance across any network.

1. The hard-disk is the slowest part of any system. Say you are operating a 2.5 GHz processor. That's 2.5 billion operations every second. A large number of hard disks only spin at 7200 rotations per minute, or 120 cycles per second, or 120 Hz. This means your CPU is more than 20 million times faster than the hard disk. The hard disk still has mechanical components. Think *Terminator 2*®, when a mechanized Schwarzenegger is outclassed by the faster, smarter T-1000. When the slowest part of your computer is making unnecessary reads, the entire system is dragged down.

2. Fragmentation has severe effects. It's more than sluggish and crawling computer speeds; fragmentation leads to crashes, hangs, data errors, file corruption and boot-time failures. Files that suffer fragmentation are more difficult and take longer to back up. When systems are thoroughly defragmented, they run faster and more reliably—period.

3. Real-time defragmentation is necessary. Many companies rely on 24/7, mission-critical servers. Taking these systems offline for maintenance is not an option. But, having a server with I/O bottlenecks is also not an option. Only real-time, invisible defragmentation fixes this catch-22 situation.

4. Give your systems faster-than-new speeds. NTFS best-fit attempts for file placement on hard drives are limited. Diskeeper® 2008 comes with a new technology called I-FAAST™ (Intelligent File Access Acceleration Sequencing Technology)[1] that re-sequences your files. So, in addition to consolidating free space, defragmenting with Diskeeper boosts access to your most frequently used files by as much as 80%. I-FAAST gives systems faster-than-new speeds.

5. Servers are especially susceptible. While disk striping improves physical I/O capacity and performance, RAID and SAN systems simply do not fix fragmentation where it begins—at the file system. Enormous volumes with heavy read/write activity lead to astronomical fragmentation rates, making RAID and SAN work harder than they should. The efficiency of RAID and SAN may lessen some of the physical effects of fragmentation, but fragmentation is never eliminated. You'll need to buy more and more equipment to compensate. Sooner or later, the tortoise catches the hare, and your system suffers I/O bottlenecks and slow server speeds.

6. Operate without interrupting productivity. The new InvisiTasking™ technology makes software transparent. Diskeeper 2008 with InvisiTasking will work invisibly in the background; only using untapped resources. Systems are continually improved without any management or impact on a system's usability.

7. Defragment despite minimal free space. The purpose of defragmentation is to restore lost speed and performance. A defrag engine must be able to operate in limited free space, because drives with extremely limited free space are the ones in need of the most help. Diskeeper 2008 handles millions of fragments and can function with as little as 1% free space.

8. Stop fragmentation before it happens. Diskeeper 2008 comes with Frag Shield™ 2.0, a technology that automatically defends against fragmentation of critical system files. Frag Shield 2.0 prevents crash-inducing fragmentation. It's like Superman® saving the day—two days before there's a problem.

9. Auto-defrag breathes life into systems. It keeps systems at optimum speeds and eliminates fragmentation-related performance issues. Thoroughly defragging systems adds 2–3 years onto the hardware's useful life.[2]

10. Analyze your network's performance. Poor performance on a remote system can easily be mistaken for a slow network. Get Disk Performance Analyzer for Networks™. This free utility scans networked systems for fragmentation. See for yourself how fragmentation is affecting your systems. This groundbreaking program will provide comprehensive reports on how system speeds will improve with thorough defragmentation. Visit www.diskeeper.com/cw2 and get this free, must-have utility.

Diskeeper 2008 is the only fully-automated defragmentation program. It operates invisibly in the background and it dynamically adapts defragmentation strategies to fit the needs of individual volumes.

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Macintosh

Why it could happen in the enterprise. And why it probably won't. **BY ROBERT L. MITCHELL**

GUIDO SACCHI, CIO and senior vice president of corporate strategies at CompuCredit Corp., decided to go with the flow. He's allowing Macintoshes into the business when the requestor makes a valid business case. "If they think they can get better productivity on a Mac, so be it. Who am I to stop them?" he says.

Sacchi's attitude is a tacit acknowledgment that innovative technologies and those offering "superior user experience" are evolving in the home market, not the business arena. "The winning strategy is about providing tools to the users that pretty much resemble what they're doing at home," he says.

This "consumerization of IT" is leading Apple Inc. into the enterprise, albeit through the back door, says Gartner Inc. analyst Charles Smulders.

But might this also signal the stirrings of a bigger change — a Mac insurrection at the enterprise level?

If there are such stirrings, they're tentative, and Apple doesn't seem to be doing much to rally the troops. "We haven't seen a pledge by Apple to increase the level of support to the enterprise," says Smulders. "They continue to say that's not a market that they're focused on."

That didn't stop Dale Frantz, CIO at Auto Warehousing Co., which began migrating to Macs across 23 locations enterprisewide last year. Even so, Apple's lack of corporate focus concerns him. "The biggest weakness at this point I'd say is the lack of a cohesive enterprise strategy on the part of Apple," he says.

Apple itself appears confused. Asked to discuss its enterprise strategy with *Computerworld*, the company vacillated for several months but finally declined. According to a spokesman, the company does support corporate customers, but he declined to elaborate on Apple's enterprise strategy.

Apple may also need to keep its resources focused on those core areas — the consumer, education, creative, IT, science and small business markets — where it's seeing rapid growth. The company's strategy is simple, says Charles Edge, director of technology at 318 Inc., an IT consultancy: "Make a great computer that's standards-compliant. If enterprises want to use it, great, but if they don't, that's fine too."

It takes more than a great product to succeed as the primary personal computing platform in large businesses. "To go after the major corporate accounts, you need a savvy direct sales force [and] a dedicated service organization to take care of enterprise accounts. That's not Apple's heritage," says Tim Bajarin, president of consulting firm Creative Strategies Inc. Even

GIANNI DE CONNO / MARLENA AGENCY

Insurrection

so, he says, "I'm getting more and more questions about bringing Macs into the enterprise and what it would take."

Smulders also reports a rise in inquiries from enterprise customers. The increased interest is being driven by changes in what the Mac has to offer; by Apple's success in the consumer, small business and IT professional markets and other niches; and by broader trends in the enterprise, where Windows' grip on the desktop may be starting to loosen just a bit.

RETHINKING THE MAC

The Mac attraction is easy to understand. On the client side, Mac OS X is relatively easy to use. The addition of new features in the latest release, Leopard, only serves to burnish that reputation. Macs are considered more stable than Windows PCs, which means fewer help desk calls, and the machines currently present fewer security problems.

But that's not what has IT's attention.

The resurgence of interest in the Mac is a direct result of the evolution of increasingly Windows-friendly, Intel x86-based Macs and the introduction of Boot Camp, which allows a full Windows environment and its complement of applications to run natively in a separate hard-drive partition on any Mac. If Apple's earlier move to Intel-based hardware had IT management rethinking the Mac's role, the full integration of Boot Camp into the Leopard release of OS X has some openly talking about it. "It changed the game," says Doug Standley, a consultant in the technology innovation strategies group at Deloitte Consulting LLP.

Geiger Brothers Inc. already has 25 Mac users in its marketing group, but Mac use could expand in the future, says Joe Marshall, business analyst at the promotional products company. A few Macs use Parallels Inc.'s virtualization software to allow access to Windows business applications, but most of Geiger's 300 PCs remain on Windows.

Boot Camp is faster than software emulation packages such as Parallels, since Windows runs directly on the hardware — and it's free. Its integration into Leopard, Marshall says, may have leveled the playing field at Geiger and other companies. "There's a potential for Apple to make very large gains into the PC environment, and not just for graphic arts," he says.

On the server side, the constellation of Apple products — Xserve, Leopard Server and Xsan — is intended to serve the small-business and departmental islands of Macs in Apple's core markets. But Apple has also beefed up some features that are important to enterprise users. Integration problems with Microsoft's Active Directory have been resolved. Users can update their directory profiles, and digital signing is supported. The fact that OS X is based on the open Unix operating system and open standards such as Samba, NFS, RADIUS and LDAP also makes life easier for administrators.

With these changes, says Edge, Apple is "pushing toward bigger environments."

Vista Worries Spur Mac Dreams

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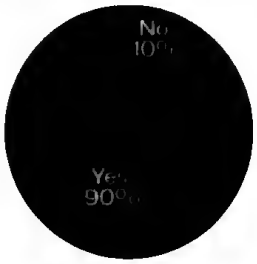

BASE: 961 IT PROFESSIONALS

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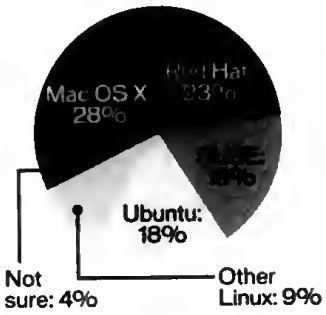

Base: The 44% of the 961 survey respondents who indicated that they would consider deploying a non-Windows operating system in place of Vista.

SOURCE: E-MAIL SURVEY OF 961 IT PROFESSIONALS CONDUCTED BY KING RESEARCH INC NOVEMBER 2007 FOR KACE NETWORKS INC

LICENSE TO SAVE

On the server side, Apple appears to have a licensing cost advantage. Its software licensing model was a primary reason why Frantz decided to standardize on Mac servers. Apple licenses Leopard Server on a per-server basis — no client access licenses are required to access file-sharing, e-mail, chat, shared calendars and other basic features.

But Apple has little momentum in larger organizations. For example, the MIT campus has about 3,000 Macs but just a few isolated Apple servers. It mostly uses Dell hardware running Windows or Linux. "I don't see [Apple] taking over the data center anytime soon," says Don Montabana, MIT's director of client support services. "You go with what works."

But Apple's success in the home and education markets has led to burgeoning grass-roots demand for Macs in many organizations, since more and more recent college graduates have Mac backgrounds these days. At Georgetown University Law Center, nearly 50% of the students are using Macs, up from less than 1% a few years ago, says CIO Pablo Molina. The same phenomenon is occurring at MIT, where 30% of all computers on campus are Macs, up from 20% last year. "This incredible rise in the use of Macs is going to put pressure on IT departments to support Macintosh PCs," Molina predicts.

Bajarin and Edge say their enterprise clients report that some new hires are lobbying for Macs. "The younger kids who grew up on Macs are frustrated with the tools they're being given," Bajarin says.

"It's a battle between corporate and the end users as to what is deployed," Smulders says. But ultimately, the choice of personal computer is not a popularity contest. "I don't believe we've gotten to the point where users are deciding," he says.

According to Standley, legacy inte-

Continued on page 32

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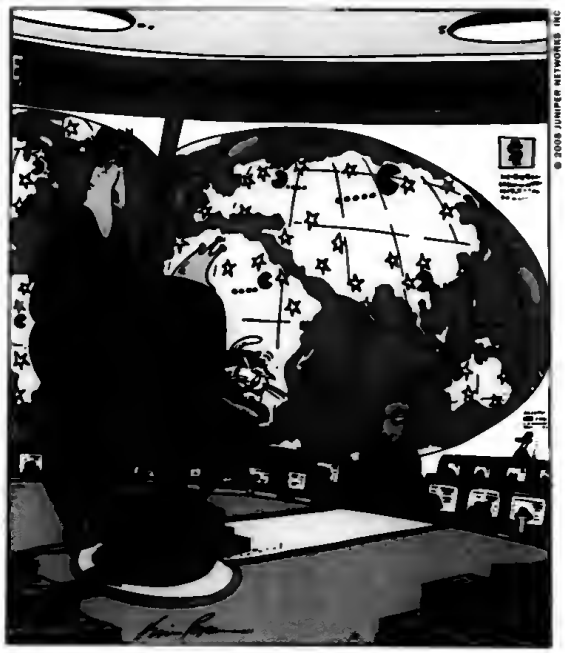

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Continued from page 30

gration and the associated conversion costs are the primary factors keeping Macs out of the enterprise. But those issues may be fading. As the adoption of Web technologies and virtualization increases, PC hardware and operating system are increasingly being abstracted away from existing enterprise applications, which have traditionally been closely aligned with Microsoft Windows. That has created a small opening for alternative platforms such as the Mac.

Some programs are being rewritten as Web-based applications; others have been moved to virtual environments such as Citrix Presentation Server. The latter execute the user's applications on back-end servers and require only a browser plug-in on the client for full access. Geiger Brothers' IT staff recently rewrote a shipping application to support a Web front end — the company's new standard. "Anything new is being coded to a browser as opposed to [Windows], for cross-platform compatibility," says Marshall.

Eventually, as the corporate PC environment becomes fully virtualized, employers won't worry about the underlying hardware and operating system. But, says Smulders, "we're still a few years away from that."

BACK TO REALITY

Despite the Mac's promise, it still falls short for broad enterprise adoption today. For Sacchi, supportability and total cost of ownership are deal-killers. "Can Apple make the case for themselves, understand all of the CIO issues and help me solve them?" For now, he says, the answer is no.

Usually, Macs are more expensive when the purchase price and cost of support are factored in, Sacchi says. So although he's allowing Macs in, he hasn't changed his plans. "Because of the higher costs in an enterprise-level deployment, you have to have a justification in productivity. Right now, I see that only in specific niches," he says.

Smulders cautions that problems yet to be addressed include lagging support from middleware and enterprise software vendors, the complexities of adding another client hardware and software platform to the mix, and the lack of a second source for system hardware and parts.

APPLE'S U.S. UNIT SHIPMENTS OF PCs BY MARKET SEGMENT, Q3 2007

Education	18.3%
Homes	10.5%
Government	2.9%
Small businesses (10-99 employees)	2.1%
Small offices (1-9 employees)	1.9%
Midsize businesses (100-499 employees)	1.4%
Large businesses (500+ employees)	0.8%

SOURCE: IDC

MIT's Montabana confirms the first point. "The piece that's left is to get all of the ERP packages compatible with the Mac," he says. "For Oracle, SAP and [other enterprise software], the Mac clients always lag behind."

Configuring Macs to support Windows also adds complexity to the environment, with two operating systems and possibly emulation software to support. Boot Camp and virtualization software are a good interim solution for small groups of Mac users that need access to a few Windows applications, but Molina doesn't see that as a long-term strategy for larger populations.

Edge recommends using Citrix Presentation Server, rather than relying on Boot Camp or emulation software such as Parallels or VMware Fusion. "It's a lot cheaper to buy an Active Directory license and a Citrix license than to buy a copy of Parallels and XP or Vista and a copy of the application," he says.

But companies with enterprise licensing agreements don't have to worry about extra Windows licenses because they've already paid for them, says Marshall. But Parallels does represent an incremental licensing expense; it costs $80 per Mac before volume discounts.

Still, that's not Molina's point. "It's not the cost but the complexity of maintaining all of those environments. I don't see that as a viable mainstream option. You either stay in Windows or you switch to Macs," he says.

Another concern is that Apple has sometimes had trouble meeting demand for equipment and parts. And its forays into licensing its hardware to third parties — first with the Mac and more recently with its iPod — have not fared well.

Sacchi says finding an alternative source for parts is not a big deal for one department with a few Macs. "But if somebody is thinking about a complete enterprise replacement, that would be a concern," he adds.

When deploying Macs at scale, IT can't afford to be held hostage to a single vendor's supply chain problems. "Compared to where they were five years ago, [Apple's] supply chain and manufacturing is much tighter," Bajarin says. But MIT is experiencing problems right now. "Getting parts from Apple can be a very, very difficult process. It can take weeks," Montabana says. In contrast, his PC vendors deliver parts the next business day.

Service and support are also hurdles. "You're transferring to a platform from a vendor that's not committed to supporting large enterprise needs. From what we've seen, the tools available and the support are not enterprise-class," Smulders says.

"In my mind, the service level has dropped from what it used to be," says Jim Quinlan, president of sporting goods retailer Jax Inc. in Fort Collins, Colo., which runs its business on Mac hardware and software. With no local Apple reseller, Jax must ship equipment back to Apple for service. If he can't wait, he must travel 70 miles to the nearest Apple store.

Edge points out that Apple offers enhanced support for larger customers, but the $50,000 price tag is high.

Quinlan doesn't plan to abandon the Mac. He says he has had no virus problems, the intuitive interface creates fewer support issues, and the hardware has been reliable. But most large businesses will likely remain insurrection-free for the foreseeable future. "I don't think you'll see a significant penetration into the enterprise until Apple makes the strategic decision to go after that," says Bajarin.

On the other hand, if Apple continues to see more interest at the IT level, he says, "they'll adjust." ■

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Rolling the Dice

Five IT pros tell about their biggest risk ever.

Risk assessment is a huge part of IT. It's also a huge part of an IT professional's career. Risk can stop you in your tracks or propel you forward, but no matter how things work out, taking a risk can be the wise thing to do. ■ We asked IT professionals to tell us about the biggest career risks they ever took. Their stories show that taking risks, even those that don't pan out, can have big payoffs — and that risk-taking can be habit-forming.

GOING FOR BROKE

Back in 1999, Marc Mallow had a vision. He saw a new way to deliver creative technical and multimedia services using a virtual network of workers. But companies weren't yet comfortable using virtual resources, broadband penetration wasn't high enough to support such services, and existing applications couldn't meet his business requirements.

So Mallow turned himself into a programmer, using his free time over the next few years to build the application that he knew could be the core of his business. "I had a goal I wanted to accomplish, and there was no off-the-shelf software to get it done," he says.

Then, in 2006, shortly after the birth of his second child, Mallow gambled big on his software: He borrowed $400,000 to start his company.

Today, Mallow is the CEO of OnIt Digital LLC in New York. He uses software he developed himself to manage the schedules of all his full- and part-time employees. His bet has paid off with an expanding business that counts Fortune 500 companies among its clients.

THE BLEEDING EDGE

Being the first to try a new technology is always a gamble, and Don Curt says he knew that. Still, as CIO at a global manufacturing and distribution company, he opted to try a vendor's new Java-based version of an ERP system when it came out in 2001.

The new system promised increased capabilities, but because of the risk inherent in trying a new product, Curt limited the implementation to just 10% of the company.

Good thing. The move to the newer model didn't go as well as he'd hoped. There were problems with bugs, transactions and connectivity. A year later, having spent $1 million, Curt aborted the initiative and moved everyone back to the vendor's older version.

"The whole thing became a black

Continued on page 36

MessageLabs

Continued from page 34

eye," Curt says. But because people were happy to get back on a system that worked and he was able to cover the $1 million through savings in other areas of IT, "the consequences in this case were minimal," he says.

But he learned a valuable lesson: "If you're going to be first, get lots of assurances, understand where you're at, and that [vendors] need to give you extra services at *their* cost — which wasn't the case with me." The experience didn't sour Curt on risk-taking, though. He is currently managing partner at Alpharetta, Ga.-based CIO Services LLC, a company he started.

BETTING ON HUMOR

When Eileen Strider was vice president of IT at a large insurance company, a planned consolidation of several data centers didn't go smoothly. The company president asked Strider to explain the situation to the unhappy business people at an annual sales force meeting. Strider knew the usual PowerPoint presentation wouldn't go over well with that audience.

"They didn't really want to know the technical details, so I was trying to figure out how to do this without making it sound like I was blaming other people," she says.

She decided to take a risk and use humor to explain — and diffuse — the tense situation. "I could have totally bombed," she says. "But my intuition was strongly telling me to do this, that it would be OK. And it couldn't be worse than boring them with PowerPoint and having them walk away saying, 'I still don't understand.' "

She dressed for her presentation in a bulletproof vest, lightening the atmosphere immediately. She used a volunteer from the audience to portray the fragile application that had to be moved to Chicago. She piled him up with a huge stack of three-ring binders and added multiple bright pink Post-its to represent the policies, patches and fixes made to the system over the years. Then she used a rubber coil to link him with another volunteer, who played a new system that ran the application, and she had them attempt to shuffle together toward another volunteer who represented Chicago.

Strider's risk helped her audience understand why the move had been rocky. It improved IT's image and enabled everyone to lighten up. She is now president of consulting firm Strider & Cline Inc. in Kansas City, Mo., which she co-founded.

THE FUTURE IS NOW

In the early 1980s, Kavin Moody was 18 months into his job as a systems planner for sales and marketing at The Gillette Co. He proposed building a system to extract information from the operational system and feed it into a different environment, where it could be analyzed and combined with much better report-writing capabilities.

In short, Moody wanted to build a business intelligence system, but this was years before anyone had put that name on it.

"It was criticized by the IT people as being redundant," Moody says. "And if it had failed, I would have been gone; no question about it. But it was the right thing to do. I knew it would have a big impact, and I felt obligated to the business managers who hired me."

He worked hard to get the CIO, an IT director and a sales division leader on board. Then he found money in the existing budget to build a prototype, which he used to convince the sales department to invest in the project. In the end, the project not only succeeded but also eventually expanded into a multidivisional system.

The success propelled Moody to build and lead the systems research department. That role put him on the path to CIO, a position he held at Gillette for five years. Today, Moody is executive director at the Center for Information Management Studies, a forum for IT management issues at Babson College in Wellesley, Mass.

LEAP OF FAITH

Naomi Karten remembers colleagues telling her that she'd make a good consultant. But at the time, she was an IT manager at a national insurance company, where she had job security. And in 1984, job security meant something. The idea of going out on her own wasn't on her radar screen.

Then, a few things got her thinking. She facilitated consensus-building between two camps that were bumping heads. She realized she didn't like the company's "toxic" work environment, and she wasn't inspired by the thought of going somewhere else and doing more of the same.

The idea of becoming a consultant clicked, and she made the leap, giving herself just one year to succeed.

"The idea of working without a boss or the security of a job was outside the scope of anything I had ever conceived of," Karten recalls.

She learned as she went. "Sometimes, what you don't know can help you," Karten says, explaining that if she had known then what it took to run a consulting business, "it would have been overwhelming."

Networking and serendipity helped her build her business, and today she is principal at Karten Associates in Randolph, Mass. "Often, we are capable of so much more than we give ourselves credit for," she says. "It's only by taking a chance that we find out what we're made of." ■

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

Assessing Risk: Easy as 1-2-3

Lauren Mackler, a personal and executive coach at Lauren Mackler & Associates LLC in Newton, Mass., and co-author of *Speaking of Success* (Insight Publishing, 2007), has a simple system to help assess risk.

1 **Write a list of pros and cons regarding the action you are contemplating.**

2 **Assign each a rank from 1 (lowest potential benefit/harm) to 10 (highest potential benefit/harm).**

3 **Add the scores to find out whether pros or cons dominate.**

"The pros-and-cons exercise puts out in front of you where your values are," Mackler says. "It really makes you think about your priorities."

– Mary K. Pratt

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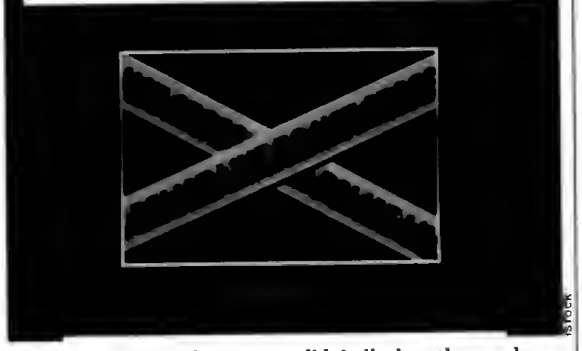
Hacks, Heists And Breaches: The Security Hall of Shame

Last year's five biggest losers offer cautionary tales.

By Jaikumar Vijayan



Recently, Fallon Community Health Plan, OmniAmerican Bank and T. Rowe Price Group Inc. joined the never-ending parade of organizations disclosing security breaches that have resulted in the potential compromise of personal data.

Last month, the retirement services group at Baltimore-based investment firm T. Rowe Price began notifying about 35,000 current and former participants in several hundred plans that their names and Social Security numbers might have been compromised.

A spokesman said that the possible breach resulted from the theft last December of computers containing the data from the offices of a third-party services provider that was preparing tax-related forms on behalf of T. Rowe Price.

A similar laptop theft in December may have compromised some personal and health care data of 29,800 members of Fallon, a Worcester, Mass.-based health care provider and insurer. A spokesman said that the laptop was stolen from a third-party service provider and that the data stored on the system doesn't appear to have been encrypted or password-protected.

In a third incident to make the news last month, Fort Worth, Texas-based OmniAmerican said that it had been forced to impose unspecified restrictions on ATM and debit card transactions after hackers broke into its systems. The bank didn't disclose the number of cards being blocked and reissued. But the *Fort Worth Star-Telegram* newspaper quoted OmniAmerican's president as saying that the bank was reissuing about 40,000 cards.

But these latest incidents seem mere peccadillos when compared with the truly sensational hacks, heists and breaches that have taken place over the past year or so. Here are our nominees for the Security Hall of Shame's five worst breaches of 2007, in ascending order.

5 Monster.com

Names, e-mail and home addresses, phone numbers and résumé IDs of an estimated 1.6 million job seekers were accessed from Monster.com's résumé database in August. Though widely described as a hacking, the information was actually accessed by attackers using legitimate usernames and passwords, most likely stolen from professional recruiters and human resources personnel who were using Monster.com to look for job candidates. No Social Security numbers or financial data was compromised.

4 TD Ameritrade Holding Corp.

Brokerage firm Ameritrade disclosed in September that someone had broken into one of its systems and stolen contact information such as names, addresses and phone numbers belonging to its more than 6.2 million retail and institutional customers. Social Security and account numbers in the same data-

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base appeared to have been left untouched, the company said. The stolen data was apparently used to send stock-related spam.

3 Fidelity National Information Services Inc. Personal information on more than 8.5 million individuals was compromised when a senior database administrator working at Certegy Check Services Inc., a subsidiary of Fidelity National, illegally downloaded the data and sold it to brokers. Fidelity National, which is separate from the better known Fidelity Investments, said in July that 2.5 million records had been compromised, but it later quietly upped the number in filings with the U.S. Securities and Exchange Commission. The company says that the stolen data appears to have been resold primarily for direct marketing purposes rather than financial fraud.

2 HM Revenue & Customs In November, the U.K.'s tax agency disclosed that it had lost unencrypted disks containing personal information on 25 million juvenile benefits claimants. The disks disappeared in transit to the U.K. National Audit Office. They included bank details and national ID numbers. Analyst firm Gartner Inc. predicted that the closure of compromised accounts and the establishment of new ones could cost British banks about $500 million.

1 The TJX Companies Inc. The booby prize goes to Framingham, Mass.-based retailer TJX. Early last year (several months after the fact), it disclosed the biggest breach ever involving payment card data.

TJX claimed that more than 45.6 million customer cards were compromised in an intrusion that went undetected for more than 18 months. But banks suing the company put the number of cards involved at 94 million. The breach prompted numerous lawsuits and calls for stronger data-protection laws — and, unfortunately, engendered a spate of fraudulent card use.

By its own estimates, TJX has already spent or set aside close to $250 million for costs stemming from the incident. ■

The Foot-Shooter Awards

Among other notable meltdowns were these self-imposed crises:

■ **DHS creates its own DDoS attack.** Thousands of security professionals subscribing to a daily news roundup e-mailed by the U.S. Department of Homeland Security found their inboxes clogged with mail from one another, thanks to an apparent technical oversight by an e-mail administrator working for a DHS contractor. The October cascade kicked off when one subscriber sent a reply to the list administrator with a change request. That e-mail was automatically re-sent to all of the list subscribers.

Within hours, dozens of subscribers had replied to the original mail. Each response was in turn sent to all of the other subscribers on the list, and so on. By the end of the day, more than 2 million messages had been generated, creating, in effect, a miniature distributed denial-of-service attack.

■ **Symantec crashes China.** A signature update to Symantec Corp.'s antivirus software in May crippled thousands of PCs in China. The software identified two critical system files of the Chinese edition of Windows XP Service Pack 2 as Trojan horses and quarantined them, causing widespread crashes. Making matters worse, those specific files were required in order to start affected systems in Safe Mode, ensuring all-but-total shutdown and drawing howls of protest from the blogosphere.

■ **House outs whistle-blowers.** In October, the House Judiciary Committee had to apologize to dozens of whistle-blowers for accidentally exposing their e-mail addresses to other individuals who, like them, had used a committee Web site to secretly submit tips about alleged abuses at the U.S. Department of Justice. The snafu came about when one of the committee's clerical employees accidentally included the e-mail addresses of all the whistle-blowers in the "To" field of a message sent out to each tipster.

■ **Microsoft sees pirates – everywhere.** In August, an unspecified server error at Microsoft Corp. resulted in many paying users of the company's Vista and XP systems being mistakenly identified as pirates by Microsoft's Windows Genuine Advantage software validation system. The problem lasted for 19 hours, during which time frustrated users lost some features that they could get back only after revalidating themselves.

– JAIKUMAR VIJAYAN

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A Chance to Hire Causes Some Angst

Now that she has **approval** to fill an empty slot, **our manager wonders** whether qualified **security engineers** will want the job.

Trouble Ticket

AT ISSUE: The state's pay structure works against hiring people with needed skills.

ACTION PLAN: Hope for the best and plan for the worst.

WORKING for a state government certainly has its ups and downs, and I've been down now for a long while. I've told you about the state's budget cuts and hiring freeze and about my department's chronic understaffing. We were overdue for some good news, and I finally got some.

The word came down from on high that we can hire someone to fill a position in my department that has been open for months. I certainly felt good about that. We've all been crunched for time in the department, with projects falling way behind schedule. I've had so much on my plate that I've been feeling as if I'm not really accomplishing anything.

A LONG WISH LIST

But as one songwriter said, just when you're thinking you've finally got it made, bad news comes knocking at the garden gate. Unfortunately, the downside has already made its presence felt.

Over these past few months, I have had a lot of time to think about what kind of person I want to fill that position. I don't need another network, Windows or help desk person. I need a security engineer. But the kind of person I want is not going to work for the salary the state is able and willing to offer.

I need someone who has Cisco security experience; someone who is familiar with PIX/ASA firewalls, VPN configurations, intrusion-detection and -prevention devices and the Cisco MARS event-correlation appliance; someone who understands why NetFlow data is important. I need someone who can see the big picture and who fully comprehends why we have to do things the way we do. It's a tall order, and the state hiring system works against filling it.

In this state government, a person's demonstrated skills are pretty much irrelevant in determining salary. What matters is the grade level of the position. That grade level has an associated pay range, and there is no variance.

■ I won't find anyone at all if I don't follow the state's Byzantine regulations for hiring new employees.

So, here I am with an impossible task. I want to hire someone with top-flight skills for very little pay. I'm left to hope that someone within the state system has been looking for an opportunity to move up the ladder — someone who already possesses the skills we need but hasn't been recognized for them.

Or maybe I'll chance upon someone in a position to follow my path into state government. I moved to this state for family reasons and took a huge pay cut to work for the state.

BURIED IN PAPERWORK

Well, I'll just have to keep my fingers crossed. I won't find anyone at all if I don't follow the state's Byzantine regulations for hiring new employees. The state personnel department seems to take some perverse delight in making everything an exercise in shuffling papers. Hiring someone involves filling out endless paperwork. I'm assured that each piece of paper serves a specific purpose, though no one seems able to tell me just what those purposes are.

This process will take months, so the sooner I hunker down and fill out the initial forms, the sooner I'll be able to hire someone — should the right person show up. In addition, I have to write an online job posting, screen candidates, conduct interviews and then fill out more paperwork as we start to narrow the number of applicants down to five.

My fallback plan, if I can't get the quality of skills I'm looking for, is to train one or two of my current employees to manage the security devices.

I'm wearing several hats right now; I'm the IT manager, the security manager and the security engineer. It's too many roles for me to be effective in any of them. I need to solve that problem, even though doing so might require me to take on three additional roles: mentor, leader and teacher. ■

JOIN IN
To join the discussion about security, go to **computerworld.com/blogs/security**.

*This week's journal is written by a real security manager, "**C.J. Kelly**," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com.*

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■ OPINION

Robert L. Mitchell

PC Virtualization: We're Almost There

THESE DAYS, everyone is excited about the promise of PC virtualization, but with so many different flavors out there, it's hard to know where to start. The idea of reducing a fully functional corporate desktop into a single file that can be carried on a USB disk and run on any PC is exciting to users. But virtualization's real benefit lies in its potential to reduce management and support burdens, improve security and reliability, and lower total cost of ownership.

We're not there yet. Figuring out how to deploy the right mix of desktop virtualization technologies at scale, and how to manage across all of those virtual environments, will be the big nut to crack in 2008. For most enterprises, this will be a year to test and experiment with smaller rollouts.

We've come a long way since desktop virtualization meant using thin clients that interacted with Windows applications running on a Citrix MetaFrame back end. Today, you can virtualize individual Windows applications (think Softricity) or entire virtual PCs (VMware ACE), and you can choose between having virtual environments execute on the PC or on back-end hardware (Citrix Xen Desktop, Presentation Server). For virtual environments that execute on the PC, some products (Kidaro, Moka5) allow streaming of centrally managed virtual machine images and updates down to the client. Kidaro adds a management wrapper around the virtual PC that includes tight security controls to allow it to run securely on unmanaged Windows PCs.

But desktop virtualization is not a one-size-fits-all proposition. Not only do you need to choose a variety of products for different needs, but in some situations, you might need to deploy virtualization in layers. For example, you can issue a plug-and-play VMware ACE virtual PC that includes its own instance of Windows, and then use an application virtualization product like Softricity to create individually isolated, virtualized Windows application instances running within that environment. There are good reasons why you might want to do that, but that's also a lot of complexity to manage.

■ Desktop virtualization is not a one-size-fits-all proposition.

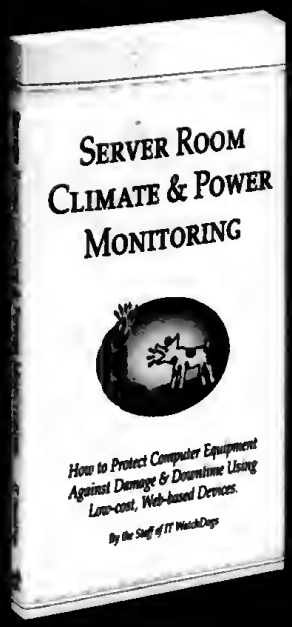
Application virtualization products are needed because they redress a core failure of Windows: the inability to control misbehaving application installs that create registry or DLL conflicts. Application virtualization lets IT avoid much of the regression testing otherwise required to create a reliable desktop system image. It also lets older applications to run on a newer version of Windows and can allow two versions of the same application to run side by side.

In the future, this capability may be integrated into Windows itself, says Natalie Lambert, an analyst at Forrester Research. She predicts that Microsoft will roll its Softricity technology into the next release. It will become the ultimate work-around for the problem of misbehaving applications, and the standard-bearer for all future deployments of Windows applications. "Three years from now, every [Windows] application will be virtualized," she says.

Once you choose the right tools, there's the question of how to manage them. Today, you do that piecemeal — even within a single vendor's product line. VMware's Virtual Desktop Manager works for hosted VDI environments, for example, but you'll need a different tool for those VMware ACE environments, and another for Thinstall, the virtualization software that VMware recently acquired. Other vendors have their own tools, of course.

But don't let that stop you. As with server virtualization, the enterprise-class tools will evolve as users climb the adoption curve. In the meantime, the ability to abstract the corporate work environment away from the vagaries of the underlying PC hardware and host operating system — and to keep squabbling applications apart — makes for a compelling business case. ■

Robert L. Mitchell *is a* Computerworld *national correspondent. Contact him at Robert_Mitchell@computerworld.com.*



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Career Watch

Too Many Chiefs

[illegible] the title of CIO was an unusual new addition to the business hierarchy that often needed to be spelled out for people. But today, according to an article in online business journal *Knowledge @ Wharton*, from the University of Pennsylvania's Wharton School, there has been an explosion of C-level titles in corporate America. Expanding from the relatively tame chief innovation officer, chief privacy officer and chief marketing officer, the chiefs have taken titles as exotic as chief reputation officer, chief blogging officer, chief customer insights officer, chief sustainability officer and even chief apology officer.

Can there possibly be enough Indians to justify all these chiefs?

Wharton management professor Sarah Kaplan says companies bestow such titles "to signal the importance of that particular issue to the corporation. So you have a chief diversity officer because the company realizes that diversity is an important initiative. And the way to signal that is to create a C-level job to implement it."

But Betsey Stevenson, professor of business and public policy at Wharton, has a different read on the C-level explosion. She suggests that some of these chiefs may be "the same ones who, as students, pushed for A's and caused grade inflation. Now they are making it into the corporate world, and they want big titles."

– KATHLEEN MELYMUKA

Laugh, and Your Manager Laughs With You

How important do you think it is for managers to have a sense of humor?

Does your manager have a good sense of humor?

SOURCE: ROBERT HALF INTERNATIONAL SURVEY OF 492 FULL- OR PART-TIME WORKERS 18 YEARS OF AGE OR OLDER AND EMPLOYED IN OFFICE ENVIRONMENTS, AUGUST 2007

Business Meets Academia

>>> How U.S. colleges and universities are working with the private sector to develop next-generation IT leaders

■ **School:** Creighton University's College of Business Administration, Omaha

■ **Number of degrees awarded in spring 2007:** B.S. in MIS: 12; B.S. in computer science (from the College of Arts & Sciences): 7; M.S. in IT management: 4; dual MBA/M.S.-ITM degrees: 4

■ **Does it have an IT advisory council?** The College of Business Administration has a Dean's Advisory Council consisting of business leaders in the Omaha area, says Associate Dean Ravi Nath, who is also the Jack and Joan McGraw Endowed Chair in IT management. The group meets formally twice a year, in addition to offering ongoing feedback on the college's IT and business curricula, says Nath. The college also solicits input from area employers where students are involved in internships, Nath says.

■ **IT executive feedback that has helped amend the curriculum:** Omaha-area executives say they're constantly looking for students with leadership skills, says Nath. So five years ago, the College of Business Administration launched a three-year extracurricular leadership program for students entering their sophomore year. Participants must take part in 10 activities, including "shadowing" an Omaha-area executive in the workplace and writing a paper on leadership, says Nath.

In addition, three years ago the college developed a course on mobile and wireless technologies that was based on input received from Omaha executives, he says.

The university also encourages students to work on projects for nonprofit businesses and organizations. Under a partnership the college formed five years ago with the Nonprofit Association of the Midlands in Omaha, teams of two or three students are involved in semesterlong IT projects that could include designing a Web site or cleansing data from a database, says Nath. The program is part of their coursework, and the students are graded on their efforts.

"It's been a very good partnership for us and for our IT students," says Nath.

– **THOMAS HOFFMAN**

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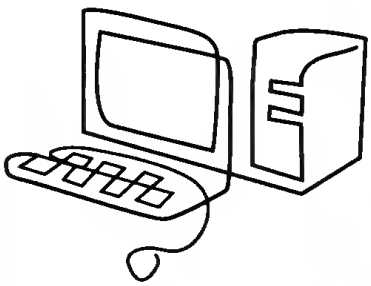

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Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Dude!

Sysadmin pilot fish is sitting in his office one morning when a system operator strolls in and comments, "Dude, the computer's on fire." What?!? says fish. "Yeah, man, it's really on fire." Reports fish, "I bolted into the control room. Sure enough, the cooling fan was billowing smoke out the back of a desktop PC. I quickly yanked the power cord and the fan stopped blowing smoke. But I think that system operator definitely overdid it in high school."

Neatnik

It's a few years back, and this exec brings his Windows 98 laptop to a support pilot fish, complaining that it won't boot. " 'Just all of a sudden,' they always say," fish grumbles. "I power it up, and it self-tests OK but then quickly complains that it can't find the msdos.sys file. From a command prompt, I perform a directory search for msdos.sys. Lo and behold, it's there: c:\junk\msdos.sys – along with other files like io.sys, boot.ini, autoexec.bat. I asked how his system files ended up in a folder called 'Junk.' He said he got tired of looking at them and made a junk folder for them."

Fine Whine

Upscale user buys a pricey PC and a few days later brings the keyboard back to this pilot fish because it's not working – and he knows why. "He was chagrined that he had spilled a glass of wine in it," says fish. "But he added quite emphatically, 'But it was a good wine!' "

Not Dead Yet

Computer shop pilot fish builds a new computer for a customer, installs the operating system and updates, and sends it on its way. "Three days later, I got a call from my supervisor," fish says. "Apparently, I sold the customer a DOA machine, and I was about to get reprimanded. She was in the showroom and furious that I sold her a dead machine. She said, 'it won't even turn on. Did you even test it?' I then proceeded to plug in the computer and she yelled at me, 'Wait! What are you doing?' I replied, 'Plugging it in.' She said, 'Oh, that gray thing isn't a battery?' I very politely replied, 'The battery has to be charged.' "

That's What It's For

User asks pilot fish to restore an e-mail that's been deleted from a shared group mailbox. "They need the e-mail that had a spreadsheet attached," says fish. "We go through all the work of restoring a mail store just to get this mailbox so we can restore one e-mail. After the restore, we tell the user that they should save the spreadsheet to the shared file folder, since that's a more logical place to be using a spreadsheet from. User says, 'Oh – we can do that?' "

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■ FRANKLY SPEAKING

Frank Hayes

Pick a Winner

WELL, THAT was quick. Last week, consumer electronics giant Toshiba announced it was pulling the plug on its high-definition video disc format, HD DVD. Within days, Toshiba's partners announced that they were now Blu-ray shops, and HD DVD players and movies were reduced to fire-sale prices.

In corporate IT, at least vendors *pretend* they'll support loyal customers for a while.

Not so in the murderously competitive consumer market. Blu-ray backers Sony and Pioneer and HD DVD supporters Toshiba and Microsoft paid movie studios to choose their formats and used promotions and discounts to keep products moving through retailers. But just weeks after one studio walked away from HD DVD, whole product lines from multiple vendors were gone.

Whew!

Of course, we in IT pick technologies all the time. We have some good rules of thumb for choosing winners. We'd never have been fooled by a loser like HD DVD, right?

Well . . . maybe. But consider:

HD DVD was first to market. Blu-ray was developed first, and Sony showed prototypes in 2000. But Toshiba got its first products out in April 2006, whereas the first Blu-ray discs weren't available until June.

HD DVD players and movies outsold Blu-ray right out of the gate. In fact, HD DVD sold more discs than Blu-ray every month for the first six months the two formats were both available.

HD DVDs were more compatible with regular DVDs. They used the same file systems as regular DVDs and could be produced by manufacturers with the same equipment used to make regular DVDs. Blu-ray discs didn't and couldn't.

HD DVD players were cheaper — at the low end, less than half the price of Blu-ray players. Discs cost about the same for both formats.

■ The difference? Two words: installed base.

HD DVD was backed by Microsoft, which offered an HD DVD drive as an option for its Xbox 360 game console.

Blu-ray looked like Betamax all over again. In the videotape format wars of the 1970s, the cheaper VHS format stomped all over Sony's technically superior Betamax. And past failure is a good indicator of future catastrophe, isn't it?

Not this time. Somehow, all those rules of thumb didn't point to a winner.

What made the difference for Blu-ray? Two words: installed base. Sony built a Blu-ray player into every PlayStation 3 it sold, starting in November 2006.

Sony shipped three times as many Blu-ray-equipped consoles as Microsoft shipped HD DVD drives. For Blu-ray, the game machine was its killer application.

In December 2006, Blu-ray movies outsold HD DVD for the first time. HD DVD was never ahead again. Despite big financial incentives (HD DVD backers reportedly paid $150 million to convince Paramount and DreamWorks to go HD DVD-only), movie studios and retailers began shifting to Blu-ray.

And when Warner Home Video made a surprise announcement at this year's Consumer Electronics Show that it was going exclusively Blu-ray, Toshiba canceled its HD DVD press conference at the show. Within weeks, it was all over for HD DVD.

Would you have seen that coming? If you just counted up the rules of thumb on each side, HD DVD should have won hands down.

So next time you pull out your rules of thumb to evaluate technology, remember: First-to-market is good. So are strong early sales, legacy compatibility, lower price and a big wet kiss from Microsoft.

But a killer app with a bigger installed base? That's what Blu them all away. ■

Frank Hayes *is* Computerworld's *senior news columnist. Contact him at frank_hayes@computerworld.com.*

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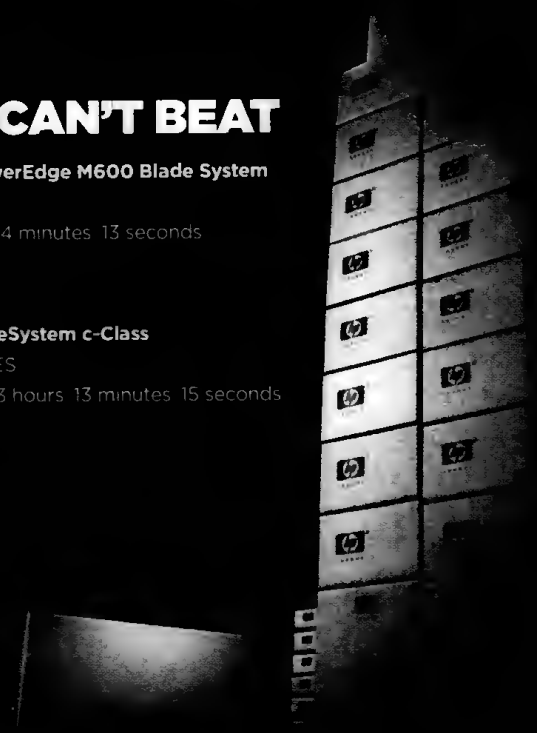

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